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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,762	10/22/2003	Nitzan Peleg	200308558-1	5363

22879 7590 04/09/2007

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EXAMINER
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TIMBLIN, ROBERT M

ART UNIT	PAPER NUMBER
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2167

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/690,762

Applicant(s)

PELEG ET AL.

Examiner

Robert M. Timblin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

This Office Action is responsive to application 10/690,762 filed 10/22/2003 and applicant's remarks/amendments filed 1/8/2007.

Claims 1-30 have been examined and are pending prosecution.

### ***Response to Amendment***

Amendments made to claims 1, 5, 9, 16, 23, and 27 are acknowledged and entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 5, 9, 16, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically the phrase "adapted to" renders the claim(s) indefinite because it suggests an option that may or may not happen. Changing the phrase to "configured to" may overcome this rejection.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4 are rejected under 35 U.S.C. 101 because no implementation of computer hardware is found in these claims. The lack of computer hardware renders claims 1-4 as being software per se and therefore is nonfunctional descriptive material.

With respect to claim Claims 27-30: the claims as amended recite a computer readable medium. The computer readable medium is not explicitly defined in the specification. The Examiner interprets a computer readable medium as recited by the claim to mean a volatile or nonvolatile medium able to be read by a computer (i.e. a hardware disk) since it comprises code.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Witkowski et al ('Witkowski' hereafter) (U.S. Patent 6,125,360).

With respect to claim 1, Witkowski teaches a system that allows a table and a materialized view to be available while the materialized view is being refreshed, the system comprising:

- a materialized view that is derived at least in part from a table (abstract and col. 4 line 37-41);

- a refresh log that contains a plurality of entries (col. 9 line 40-50, col. 16 line 17-24 and figure 4c), each of the plurality of entries corresponding to a change in the table

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(col. 9 line 12-23, col. 16 line 17-33 and figure 4c), each of the plurality of entries comprising an epoch identifier (SCN) adapted to synchronize the refresh log between refreshing operations (col. 9 line 25-33); and

a refresh manager (figure 3) that performs a refresh operation on the materialized view in multiple steps by (a) successively reading a first subset of the plurality of entries indicated by a specific epoch identifier from the refresh log (col. 9 line 55-60), (b) identifying a second subset of the plurality of entries from within the first subset of the plurality of entries, the second subset of the plurality of entries falling within a primary key value boundary (database queries of columns 9 and 10) and (c) applying the second subset of the plurality of entries to the materialized view (col. 9 line 25-33).

With respect to claim 2, Witkowski teaches the system set forth in claim 1, wherein the corresponding epoch identifiers represent epoch numbers that have been created since a previous refresh operation on the materialized view (col. 9 line 18-23).

With respect to claim 3, Witkowski teaches the system set forth in claim 1, wherein the second subset of the plurality of entries is applied to the materialized view in a primary key order (col. 9 line 25-37 and figure 7).

With respect to claim 4, Witkowski teaches the system set forth in claim 1, wherein the refresh manager is adapted to distinguish between entries of the second subset of the plurality of entries that have already been applied to the materialized view

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in previous transactions and entries of the second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of the refresh operation (col. 9 line 55-col. 10 line 7 and col. 9 line 34-39).

With respect to claim 5, Witkowski teaches A method of refreshing a materialized view that is in part derived from a table, the method being adapted to improve the availability of the table and the materialized view while the materialized view is being refreshed, the method comprising:

deriving a materialized view from at least one table (abstract and col. 4 line 37-41);

assigning an epoch identifier (SCN) to changes made to the at least one table (col. 9 line 12-23, col. 16 line 17-33 and figure 4c);

storing an entry corresponding to each change to the at least one table in a refresh log that includes a plurality of entries (col. 9 line 40-50, col. 16 line 17-24 and figure 4c), each of the plurality of entries comprising an epoch identifier (SCN) that is adapted to synchronize the refresh log between refreshing operations (col. 9 line 25-33); and

performing a refresh operation in multiple operations (col. 9, Incremental Refresh Operation), each of the multiple operations comprising (a) successively reading a first subset of the plurality of entries indicated by a specific epoch identifier from the refresh log (col. 9 line 55-60), (b) identifying a second subset of the plurality of entries from within the first subset of the plurality of entries, the second subset of the plurality of entries falling within a primary key value boundary (database queries of columns 9 and

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10) and (c) applying the second subset of the plurality of entries to the materialized view (col. 9 line 25-33).

With respect to claim 6, Witkowski teaches the method set forth in claim 5, comprising applying the second subset of the plurality of entries to the materialized view in a primary key order (col. 9 line 25-37 and figure 7).

With respect to claim 7, Witkowski teaches the method set forth in claim 5, comprising defining the epoch identifier to correspond to changes that have been made to the table since a previous refresh operation on the materialized view (col. 9 line 18-23).

With respect to claim 8, Witkowski teaches the method set forth in claim 5, comprising distinguishing between entries of the second subset of the plurality of entries that have already been applied to the materialized view in previous transactions and entries of the second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of the refresh operation (col. 9 line 55-col. 10 line 7 and col. 9 line 34-39).

With respect to claim 9, Witkowski teaches A system that provides availability of a table and a materialized view while the materialized view is being refreshed, the table being derived at least in part from the materialized view, the system comprising:

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a refresh log that contains a plurality of entries (col. 9 line 40-50, col. 16 line 17-24 and figure 4c), wherein the plurality of entries comprise data that is being refreshed (col. 9 line 24-67), each of the plurality of entries comprising an epoch identifier adapted to synchronize the refresh log between refreshing operations (col. 9 line 25-33); and

a refresh manager (figure 3) that computes a table delta (col. 9 line 13-26) based on the refresh log (col. 15 line 24-40 and col. 16 line 17 line1-10) and applies the table delta to the materialized view (col. 15 line 40-47 and figure 5).

With respect to claim 10, Witkowski teaches the system set forth in claim 9, wherein each of the plurality of entries comprises an epoch identifier (col. 9 line 18-23 SCN).

With respect to claim 11, Witkowski teaches the system set forth in claim 10, wherein the epoch identifier corresponds to changes that have been made to the table since a previous refresh operation on the materialized view (col. 9 line 18-23).

With respect to claim 12, Witkowski teaches the system set forth in claim 9, wherein the table delta is applied to the materialized view in a primary key order (col. 9 line 25-37 and figure 7).

With respect to claim 13, Witkowski teaches the system set forth in claim 9, wherein the table delta is used to refresh the materialized view in multiple transactions (col. 9 line 25-37 and figure 7).



With respect to claim 14, Witkowski teaches the system set forth in claim 9, wherein a primary key value for each entry from the refresh log is recorded after that entry is applied to the materialized view (col. 16 line 18-24 and figure 4c).

With respect to claim 15, Witkowski teaches the system for refreshing the materialized view set forth in claim 9, wherein the refresh manager is adapted to distinguish between a first subset of the plurality of entries that have already been applied to the materialized view in previous transactions and a second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of the refresh operation (col. 9 line 55-col. 10 line 7 and col. 9 line 34-39).

With respect to claim 16, Witkowski teaches a method of refreshing a materialized view that is derived at least in part from a table, the method being adapted to provide availability of the table and the materialized view while the materialized view is being refreshed, the method comprising the acts of:

storing a plurality of entries corresponding to changes in the table in a refresh log wherein the plurality of entries comprise data that is being refreshed (col. 9 line 40-50, col. 16 line 17-24 and figure 4c), each of the plurality of entries comprising an epoch identifier (SCN) adapted to synchronize the refresh log between refreshing operations (col. 9 line 25-33);

computing a table delta based on the refresh log (col. 9 line 13-26 and col. 15 line 25-32);

refreshing the materialized view based on the table delta (abstract and col. 9 Incremental Refresh Operation section).

With respect to claim 17, Witkowski teaches the method set forth in claim 16, wherein the table delta is applied to the materialized view in a primary key order (col. 9 line 25-37 and figure 7).

With respect to claim 18, Witkowski teaches 18 the method set forth in claim 16, comprising updating the materialized view in multiple transactions (col. 9 line 25-37 and figure 7).

With respect to claim 19, Witkowski teaches the method set forth in claim 16, comprising storing an epoch identifier as a portion of each of the plurality of entries (col. 9 line 18-23 SCN).

With respect to claim 20, Witkowski teaches the method set forth in claim 19, comprising defining the epoch identifier to correspond to changes that have been made to the table since a previous refresh operation on the materialized view (col. 9 line 18-23).

With respect to claim 21, Witkowski teaches the method set forth in claim 16, comprising recording the primary key value for each entry from the update log after that entry is applied to the materialized view (col. 16 line 18-24 and figure 4c).

With respect to claim 22, Witkowski teaches the method set forth in claim 16, comprising distinguishing between a first subset of the plurality of entries that have already been applied to the materialized view in previous transactions and a second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of the act of refreshing the materialized view (col. 9 line 55-col. 10 line 7 and col. 9 line 34-39).

With respect to claim 23, Witkowski teaches a system that provides availability of a table and a materialized view while the materialized view is being refreshed, the table being derived at least in part from the materialized view, the system comprising:

a refresh log that contains a plurality of entries (col. 9 line 40-50, col. 16 line 17-24 and figure 4c), wherein the plurality of entries comprise data that is being refreshed (col. 9 line 24-67), each of the plurality of entries comprising an epoch identifier adapted to synchronize the refresh log between refreshing operations (col. 9 line 25-33); and

means for computing a table delta based on the refresh log (col. 9 line 13-26 and col. 15 line 25-32); and

means for applying the contents of the table delta to the materialized view (abstract and col. 9 line 25-55).

With respect to claim 24, Witkowski teaches the system set forth in claim 23, wherein each of the plurality of entries comprises an epoch identifier (col. 9 line 18-23 SCN).

With respect to claim 25, Witkowski teaches the system set forth in claim 24, wherein the epoch identifier corresponds to changes that have been made to the table since a previous refresh operation on the materialized view (col. 9 line 18-23).

With respect to claim 26, Witkowski teaches the system set forth in claim 23, wherein the means for applying the table delta to the materialized view is adapted to distinguish between a first subset of the plurality of entries that have already been applied to the materialized view in previous transactions and a second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of applying the table delta to the materialized view (col. 9 line 55-col. 10 line 7 and col. 9 line 34-39).

With respect to claim 27, Witkowski teaches a computer readable medium, comprising:

a refresh log stored on the machine readable medium, the refresh log containing a plurality of entries each of the plurality of entries (col. 9 line 40-50, col. 16 line 17-24 and figure 4c) comprising an epoch identifier (col. 9 SCN) adapted to synchronize the refresh log between refreshing operations, wherein one of the plurality of entries comprises refreshable data associated with a materialized view (col. 9 line 25-33 and col. 9 line 24-67); and

code adapted to refresh the materialized view at least in part from a table by computing a table delta based on the refresh log and applying the table delta to the materialized view.

With respect to claim 28, Witkowski teaches the computer program set forth in claim 27, wherein each of the plurality of entries comprises an epoch identifier (col. 9 line 18-23 SCN).

With respect to claim 29, Witkowski teaches the computer program set forth in claim 28, wherein the epoch identifier corresponds to changes that have been made to the table since a previous refresh operation on the materialized view (col. 9 line 18-23).

With respect to claim 30, Witkowski teaches the computer program set forth in claim 27, wherein the refresh manager is adapted to distinguish between a first subset of the plurality of entries that have already been applied to the materialized view in previous transactions and a second subset of the plurality of entries that have not been applied to the materialized view in the event of a failure of a refresh operation (col. 9 line 55-col. 10 line 7 and col. 9 line 34-39).

***Response to Arguments***

Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

With respect to claims 1-4, the Examiner maintains the claim rejections under 35 USC 101. Specifically, claim 1 and its depending claims are construed to being software per se as they lack hardware essential to perform the functionality of the claim. Claims 1-4 are interpreted to be directed towards a system but lack the necessary structural elements to be a "system." Only when the claimed invention taken as a whole is directed to a mere program listing, i.e., to only its description or expression, is it descriptive material per se and hence nonstatutory. See MPEP 2106.01.

With respect to Applicant's arguments to the combination of references to reject claims 1-30 under 35 USC 103 starting on page 12 of remarks, the Examiner submits that the Witkowski reference teaches the limitations of claims 1-30 and therefore the arguments are moot.

With respect to Applicant's arguments on page 15 of remarks that Witkowski fails to disclose an epoch identifier adapted to synchronize the refresh log between refreshing operations, the Examiner submits that as this is a newly added limitation, the argument is moot.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Timblin whose telephone number is 571-272-5627. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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